

ABSTRACT

[0064] A pneumatic cylinder has a shaft member (14) having a piston (11) and a piston rod (3) combined with each other in an axial direction, a cylinder body (2) for protruding a piston rod (3) outward and supporting the shaft member (14) so as to freely reciprocate linearly, and porous air bearings (9) and (12) which are incorporated into the cylinder body (2) and slidably support the piston (11) and the piston rod (3). Materials whose thermal expansion coefficients are approximately equivalent are used for the shaft member (14), the cylinder body (2), and the air bearings (9) and (12). While gaps between the shaft member (14) and the air bearings (9) and (12) are held constant, and performances of air layers formed in the gap, namely, a sliding performance and a sealing performance can be maintained stably regardless of temperature change.